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EXAMINER	
BAYARD, DJENANE M	
ART UNIT	**PAPER NUMBER**
2141	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/714,406	BAHL ET AL.	
	Examiner	Art Unit	
	Djenane M. Bayard	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,20 and 23-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15, 20 and 23-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to election for restriction in which claims 1-15, 20 and 23-27 were selected.

Response to Arguments

2. Applicant's arguments filed on 9/02/05 have been fully considered but they are not persuasive.

As per claim 1, Applicant argues that He reference does not disclose or suggest a system wherein "the DNS-LBs are configured to determine performance characteristics of each of the multiple globally dispersed servers". However, He clearly teaches wherein "the server selected is based on network measurements gathered... The network measurement are performed on each of the server or gathered from each server using network measurement devices and techniques" (See page col. 4, lines 1-25). Furthermore, He teaches wherein network measurements are used to select the optimal server for the request submitted by the client, thus providing the lowest network latency. It is well known in the art that determining network performance, network load or network traffic is an inclusive part of determining performance measurement of a server in order to minimize network latency in a load balancing system.

Furthermore, Applicant argues that He reference fails to disclose or suggest a system with load balancing domain name servers that are deployed in close proximity to the clients. However, the claimed language fails to disclose how close is "close physical proximity". In a networking environment, physical proximity can be two systems sharing the same cable, two systems a couple of hops away from each other or two systems a hundred of hops away from each other. Applicant failed to disclose what is considered to be "close physical proximity" in

this particular case. He clearly teaches wherein " the client system is directly connected to an LBS Selector through a single cable" (See col. 3, lines 19-20). The Office believes that this teaching by He clearly the " close physical proximity" between the two systems. The LBS selector performs the function of a DNS (Domain Name Server) since it translated domain names into Internet Protocol (IP) address. The secondary prior art, Zisapel, was introduced to explicitly teach the "close ph7ysical proximity" argued by the Applicant. Applicant argues that the system described by Zisapel et al appears to include load-balancer that are located near the content servers, instead of the clients. However, the language of claim 1 recites, "a plurality of load balancing domain name servers (DNS-LBs) deployed in close physical proximity to the clients." As explained above, "close physical proximity" is not defined by the Applicant. Furthermore, having load balancers located near the content servers does not exclude having them in "close physical proximity" to the clients. Zisapel et al does not teach away from the system recited in claim 1 since the system recited in claim 1 never taught that the load balancers could not be "close physical proximity" to the content servers while being in "close physical proximity" to the client.

As per claims 10, 12 and 20, Applicant argues that the references fail to describe "deploying the DNS-LBs in close physical proximity to a DNS-ISP associated with the client". Pease see argument for "close physical proximity". Furthermore, It would have been obvious to one with ordinary skill in the art that if the DNS-Lbs are in "close physical proximity" to the clients, it is inherent that they are in "close physical proximity" to the DNS-ISP since the DNS-ISP is the service provider for the client and service provider are always chosen based on the lowest network latency (lowest number of hops). Furthermore, Applicant argues that the

references cannot disclose or suggest receiving mapping information associating the DNS-ISP with a proximately located DNS-LB capable of determining server performance from a location physically proximate to the ISP's point of presence. However, Zisapel clearly teaches wherein " the client DNS in response to the IP number sent by the server DNS forwards the client request the LB selector. The LB Selector examines the client request sent by the client DNS to select a LB server and to forward the client request to that LB Server (See col. 5, lines 45-67)". Furthermore, Zisapel et al teaches "a data structure is used to create a mapping table to link a client DNS to a series of LB servers... The data structure allows the LBS selector to be configured to use a LB server as a primary server and to use the next server when the primary server is too heavily loaded" (See col. 9, lines 11-67). Applicant argues that the references fail to describe deploying the DNS-LBS in close proximity to a DNS-Isp associated with the client. It is well known in the art that request from a client a forwarded to the ISP (internet service provider) before any services can be provided. Therefore, it is obvious that the ISP will become the client that is making the request and the Load balancer will be in " close physical proximity" as described above. Furthermore, Applicant argues that the references fail to teach or disclose "DNS-LB that are located in close physical proximity to a DNS-ISP associated with the clients or receiving mapping information associating a DNS-ISP with a proximately located DNS-LB". However, Zisapel clearly teaches wherein if a corresponding entry is found in the proximity table, the request is simply routed to the location having the best network proximity (See page 3, paragraph [0036-0038 and page 4 paragraph [0043]).

As per claim 23 and 26, Applicant argues that the references fail to teach " identifying at least one load balancing server from a group of load balancing servers, the identified load

balancing server situated at a location in physical proximity to the ISP DNS server and a load balancing server configured to determine at least one of the content servers with characteristics relative to the location". He clearly teaches wherein "the LBS selector identify a specific LB server... the data structure assigns a single client DNS to be associated with a single LB server" (See col. 9, 27-30) thus identifying a load balancing server from a group of load balancing server. Furthermore, He et al teaches wherein "based on the network measurements and the client request, the LB server determines the best server for handling the client request" (See col. 5, lines 64-67). Applicant failed to disclose what is considered to be "close physical proximity" in this particular case. The Office believes that the teaching by He clearly the " close physical proximity" between the two systems (See col. 5). The LBS selector performs the function of a DNS (Domain Name Server) since it translated domain names into Internet Protocol (IP) address. The secondary prior art, Zisapel, was introduced to explicitly teach the "close physical proximity" argued by the Applicant. Zisapel clearly teaches load balancing server situated at a location in physical proximity to the ISP DNS.

Applicant argues that the references fail to describe a load-balancing server configured to determine at least one of the content servers with characteristics relative to the location. However, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph (0036-00381). Furthermore, Zisapel et al teaches wherein a load balancer that receives a request from a client may check proximity table for an entry indicating the subnet corresponding to the subnet of the source IP address of the incoming request (See page 4, paragraph [0043]).

The Applicant argues that the references fail to describe a referral server configured to respond to a request by determining at least one of the load balancing servers that is proximate to the ISP DNS server from which the request was received and referring the ISP DNS server to the determined load balancing server. Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph (0036-00381). Furthermore, Zisapel wherein a load balancer that receives a request from a client may check proximity table for an entry indicating the subnet corresponding to the subnet of the source IP address of the incoming request (See page 4, paragraph [0043]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-20 and 23-27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,671,259 to He et al in view of U.S. Patent application No. 2005/0022203 to Zisapel et al.

a. As per claim 1, He et al teaches a system for performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an

ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the system comprising: a first domain name server deployed on an Internet backbone (DNS-B) (See col. 5, lines 52-54); and a plurality of load balancing domain name servers (DNS-LBs) (See col. 5, lines 59-61 and col. 4, lines 66-67), the DNS-LBs having stored therein IP address information of the multiple globally-dispersed servers to be load balanced (See col. 10, lines 15-32), the (DNS-LBs) each sending mapping information to the DNS-B relating the DNS-LB's IP address to an IP address of the DNS-ISP to which it is in close physical proximity (See col. 7, lines 29-34), the DNS-LBs determining performance characteristics of each of the multiple globally-dispersed servers (See col. 9, lines 66-67 and col. 10, lines 1). (Remarks: The LB server and the LBS selector perform the function of domain name server since they translate domain names into Internet Protocol (IP) address or numbers). However, He et al fails to teach wherein the clients are placed in physical proximity with the DNS.

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

b. As per claim 2, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address to the DNS-ISP of the server having the best performance characteristics (See col. 4, lines 5-15).

c. As per claim 3, He et al teaches wherein the DNS-B stores the mapping information for the plurality of DNS-LBs to forward IP address queries to one of the DNS-LBs closest to the DNS-ISP from which the IP address query originated (See col. 10, lines 15-32 and col. 7, lines 29-34), and wherein the DNS-LB closest to the DNS-ISP returns the IP address of the DNS-LB to the DNS-ISP (See col. 4, lines 1-4).

d. As per claim 4, He et al teaches wherein the DNS-B provides its IP address information to the DNS-A to enable the DNS-A to forward IP address queries to the DNS-B (See col. 5, lines 50-52).

e. As per claim 5, He et al teaches wherein the DNS-B receives IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-7).

f. As per claim 6, He et al teaches wherein the DNS-LB is a client of the DNS-ISP (See col. 5, lines 29-39).

g. As per claim 7, He et al teaches wherein a DNS-B deployed on each Internet backbone, and wherein each DNS-B contains the mapping information for all of the DNS-LBs stored therein (See col. 10, lines 15-32).

h. As per claim 8, He et al teaches wherein the DNS-LB transmits updated mapping information upon a change of an IP address of the DNS-ISP (See col. 6, lines 14-27).

i. As per claim 9, He et al teaches wherein each of the DNS-LBs transmit performance information of the servers to the DNS-B, and wherein the DNS-B utilizes the mapping information to determine the proper DNS-LB (See col. 10, lines 15-32) performance information to utilize to select the IP address of the server having the best performance characteristics to return to the DNS-ISP from which an IP address query originated (See col. 11, lines 60-67).

j. As per claim 10, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49), the method comprising the steps of receiving IP address information from the DNS-A for the servers to be load balanced (See col. 11, lines 1-13); providing the IP address information to a plurality of load balancing domain name servers (DNS-LB) (See col. 11, lines 20-22); receiving mapping information associating DNS-ISP IP address information to IP address information of a proximately located DNS-LB capable of determining server performance from a location

physically proximate to the ISP's point of presence and referring address inquiries from a DNS-ISP to a physically proximate DNS-LB in accordance with the mapping information (See col. 9, lines 27-67).

Zisapel et al teaches a load balancing system. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

k. As per claim 11, He et al teaches a computer-readable medium having computer executable-instructions (See col. 10, lines 44-55).

l. As per claim 12, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through an ISP having a domain name server (DNS-ISP) (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith (See col. 5, lines 48-49); receiving IP address information for the servers (See col. 10, lines 23-25); monitoring performance of the servers at the received IP addresses (See col. 7, lines 55-60); and providing at least one IP address for a server in response to a name query selected based on the monitoring

step (See col. 5, line 66-67 and col. 6, lines 1). However, He et al fails to teach obtaining, by a load balancing domain name server (DNS-LB), IP address information for a DNS-ISP located in close physical proximity to the DNS-LB; providing a mapping of an IP address of the DNS-LB to the IP address information of the DNS-ISP to an external domain name server.

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

m. As per claim 13, He et al teaches a method further comprising the steps of detecting a change in the DNS-ISP IP address; and updating the mapping of the IP address of the DNS-LB to the IP address information of the DNS-ISP to the external domain name server (See col. 9, lines 13-67).

n. As per claim 14, He et al teaches wherein comprising the steps of receiving selection criteria for the selection of an IP address; receiving a name query from the DNS-ISP (See col. 5, lines 47-49); and wherein the step of providing at least one IP address for a server in response to a name query selected based on the monitoring step further comprises the step of providing at

least one IP address for a server in response to a name query selected based on the monitoring step and on the selection criteria (See col. 5, line 66-67 and col. 6, lines 1).

o. As per claim 15, He et al teaches a computer-readable medium having computer-executable instructions (See col. 10, lines 44-55).

p. As per claim 20, He et al teaches a method of performing client-centric load balancing of multiple globally-dispersed servers, the servers being accessed by clients connecting through Internet service providers (ISPs) at a point of presence (POP), (See col. 5, lines 45-49), the servers further having an authoritative domain name server (DNS-A) associated therewith containing information regarding the IP addresses of the servers (See col. 5, lines 45-49), the method comprising the steps of: deploying a first plurality of load balancing domain name servers (DNS-LBs) in close physical proximity to the ISP POPS (See col. 5, lines 59-61 and col. 4, lines 66-67); deploying a second plurality of second level domain name servers (DNS-Bs) on the Internet backbones and regional provides (See col. 5, lines 52-54); communicating IP address information for the DNS-Bs to the DNS-As to enable the DNS-As to refer name queries to the DNS-Bs; monitoring, by the DNS-LBs at a location physically proximate to the ISP POP, performance of the servers (See col. 7, lines 55-60); and providing, by the DNS-LB in response to a query from the DNS-ISP, the IP address of a server based on the step of monitoring (See col. 9, lines 66-67 and col. 10, lines 1). However, He et al fails to teach providing, by the DNS-LBs to the DNS-B, mapping information associating an IP address of the DNS-LB to an IP address of the physically proximate DNS-ISP to enable the DNS-B to refer name queries from a DNS-ISP

to the physically proximate DNS-LB and communicating IP address information of the servers to the DNS-LBs (See col. 10, lines 15-32);

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

q. As per claim 23, He et al teaches a method for load balancing: content servers, each of the content servers associated with a domain name, the method comprising: receiving a request to resolve the domain name from an ISP DNS server: identifying at least one load balancing server from a group of load balancing servers (See col. 5, lines 54-67); sending the IP address of the identified load balancing server to the ISP DNS server, the identified load balancing server configured to determine at least one of the content servers with certain characteristics relative to the location and to resolve the domain name with an LP address associated with the determined content server (See col. 5, lines 45-63).

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

r. As per claims 24 and 27, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the certain characteristics include load level, availability, network latency, or network cost.

Zisapel et al teaches wherein the certain characteristics include load level, availability, network latency, or network cost (See page 4, paragraph [0040]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the certain characteristics include load level, availability, network latency, or network cost as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

s. As per claim 25, He et al in view of Zisapel et al teaches the claimed invention as described above. However, He et al fails to teach wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

Zisapel et al teaches wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the identified load balancing server is situated closest to the ISP DNS server among the group of load balancing servers as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farms site or sites to which request from a particular subnet should be routed (See page 4, paragraph [0038]).

t. As per claim 26, He et al teaches a system far load balancing a group of content servers located at multiple sites, the group of content servers associated with a domain name, each content server configured to interact with clients through ISP DNS servers associated with the clients, the system comprising: load balancing servers configured to resolve the domain name with an IP address associated with at least one of the content servers, each load balancing server also configured to monitor the content servers and to resolve the domain name with the LP address of at least one of the content servers with certain characteristics relative to the location of the load balancing server (See col. 3, lines 39-54), a referral server configured to receive requests to resolve the domain name from the ISF DNS servers, the referral server configured to respond to each request by determining at least one of the load balancing servers that is proximate to the ISP DNS server from which the request was received and referring the ISP DNS server to the determined load balancing server (See col. 3, lines 65-67 and col. 4, lines 1-25); and wherein each load balancing server responds to each request by determining at least one of the content servers that has certain characteristics relative to the location and by resolving the domain name in]n the request with the IP address of the determined content server (See col. 5, lines 45-63).

Zisapel et al teaches the claimed invention as described above. Furthermore, Zisapel et al teaches wherein the clients are placed in physical proximity with the DNS and sending mapping information relating the IP address (See page 3, paragraph [0036-0038]).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate wherein the client are placed with physical proximity with the DNS and sending mapping information relating the IP address as taught by Zisapel et al in the claimed invention of He et al in order to indicate subnets and the best server farm site or sites to which requests from a particular subnet should be routed (See page 4, paragraph [0038]).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Djenane Bayard

Patent Examiner

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